REMARKS

Applicants have amended claims 3, 14, and 25. The amendments to those claims are shown in the attached Appendix. These amendments do not add new subject matter. In particular, the amendments to claims 3, 14, and 15 are supported by the specification as noted below. Claims 1-33 are pending.

Claims Rejected Under 35 U.S.C. § 112, ¶ 1

The Examiner rejected claims 3, 6, 14, 15, 25, and 28 under 35 U.S.C. § 112, ¶ 1, for allegedly lacking enablement. (Paper No. 12 at page 3). Specifically, the Examiner alleged that the specification, "while be enabling for 'making an allele call,' does not reasonably provide enablement for 'making a <u>correct</u> allele call.'" (<u>Id</u>.).

In order to facilitate prosecution and more clearly recite the claimed invention, Applicants amended claims 13, 14, and 25 to recite, *inter alia*, "processing a signal" in place of "making correct allele calls." Support for "processing a signal" can be found, e.g., on page 13, line 1 to page 6, line 3 and in Figure 3A. Furthermore, based on at least the exemplary code on pages 16-17, the specification provides at least one example for processing a signal. Therefore, the claims are enabled by Applicants' specification.

The Examiner also alleges that one of ordinary skill would not know the meaning of the term "complexity." (Paper 12 at page 4). Applicants respectfully submit that one of ordinary skill would know the meaning of "complexity" in the context of the claims and the specification. Nevertheless, Applicants have amended the claims to recite, *inter alia*, "the complexity relating to least energy levels associated with the signal" for the

sole purpose of facilitating prosecution. Support for this amendment can be found, e.g., on page 13, lines 4-8, page 14, line 7, and page 15, lines 5-6.

Although the Examiner lists factors, summarized in In re Wands, to be considered in determining whether a disclosure would require undue experimentation, the Examiner has not addressed a particular factor. (Paper 12 at page 3). Thus, Applicants need not address those factors. Furthermore, Applicants respectfully submit that the specification provides clear support of the subject matter of the claims, and the claims are enabled by the specification.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. 112, ¶ 1 rejection.

Claims Rejected Under 35 U.S.C. § 102(b)

The Examiner has maintained the rejection of claims 3, 6, 14, 15, 25, and 28 as allegedly being anticipated by U.S. Patent No. 5,580,728 to Perlin ("Perlin"). (Paper No. 12 at page 5). The Examiner alleged that Perlin teaches all of the elements of these claims. (Id. at pages 5-6). Applicants traverse this rejection.

As noted above, Applicants amended claims 3, 14, and 25 to recite, *inter alia*, "the complexity relating to at least energy levels associated with the signal." Furthermore, Applicants further amended the claims to recite "making an allele call" or "make an allele call" for the signal based on the determined complexity for the signal. Support for this amendment can be found, e.g., on page 13, line 1 to page 6, line 3 and in Figure 3A..

In order for Perlin to anticipate claims 3, 14, and 25, Perlin must teach each and every element of the claims. Claims 3, 14, and 25 recite "making an allele call" or "make an allele call" based on the determined complexity for the signal, and *the complexity relating to at least energy levels associated with the signal.*"

Perlin discusses a method for genotyping using a linear time-to-size interpolation. (Perlin, Col. 8, ll. 24-38). Specifically, Perlin discusses that the method uses a linear time-to-size interpolation to convert the time of each peak apex's occurrence to a DNA size estimate. (Perlin, Col. 12, ll. 53-56). Perlin defines an "apex" as the point of change between a monotonically increasing series and a monotonically decreasing series, left to right. (Perlin, Col. 12, ll. 48-51). Thus, the Perlin method fails to teach using a complexity relating to at least energy levels associated with the signal to make an allele call, as recited in claims 3, 14, and 25.

Claims 6, 15, and 28 depend from claims 3, 14, and 25, respectively. Because Perlin fails to teach each and every element of claims 3, 14, and 25, as discussed above, it must also fail to teach each and every element of claims 6, 15, and 28. Thus, Applicants need not respond to Examiner's comments under § 102(b) regarding the elements of those dependent claims. Furthermore, Applicants do not acquiesce in the substantive merits of those comments.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the § 102(b) rejections of claims 3, 5, 14, 15, 25, and 28 over Perlin.

<u>Claims Rejected Under 35 U.S.C. § 102(e)</u>

The Examiner has maintained the rejection of claims 3, 6, 14, 15, 25, and 28 as allegedly being anticipated by U.S. Patent No. 6,274,317 to Hiller *et al.* ("Hiller").

Hiller also fails to teach each and every element of claims 3, 14, and 25. Claims 3, 14, and 25 recite "making an allele call" or "make an allele call" based on the determined complexity for the signal, and *"the complexity relating to at least energy levels associated with the signal."* At least these elements of the claims are not taught in Hiller.

Hiller discusses an automated allele caller system that identifies alleles from a trace. The automated allele caller applies a typical shape of an allele for a marker to the trace to identify potential allele calls that match to the typical shape of the allele at the marker and assigns a quality factor to the allele calls. (Hiller, Abstract, Col. 2, ll. 25-31). Specifically, in Figure 6A, Hiller discusses a method for allele calling that retrieves potential calls and matches a pattern of potential calls to a model shape. (Hiller, Figure 6A, Col. 7, ll. 31-42). The Hiller process, however, does not use a complexity relating to at least energy levels associated with the signal to make an allele call, as recited in claims 3, 14, and 25.

Claims 6, 15, and 28 depend from claims 3, 14, and 25, respectively. Because Hiller fails to teach each and every element of claims 3, 14, and 25, as discussed above, it must also fail to teach each and every element of claims 6, 15, and 28. Thus, Applicants need not respond to Examiner's comments under § 102(e) regarding the

elements of those dependent claims. Furthermore, Applicants do not acquiesce in the substantive merits of those comments.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the § 102(e) rejections of claims 3, 6, 14, 15, 25, and 28 over Hiller.

Conclusion

Applicants request the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims. If the Examiner does not agree that the application is in condition for allowance, Applicants request the Examiner to call the undersigned at 650-849-6680 to schedule an interview.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: _February 20, 2003_   By: _Sang Hui Kim_
                                    Sang Hui Michael Kim
                                    Reg. No. 40,450

APPENDIX

Claim Amendments

3. (Twice amended)   A computer-implemented method for processing a signal [making correct allele calls], comprising:

receiving [a] the signal representing nucleic acid information;

determining a complexity for the signal, the complexity relating to at least energy levels associated with the signal; and

making [a correct] an allele call for the signal based on the determined complexity for the signal.

14. (Twice amended)   A system for [making correct allele calls] processing a signal, comprising:

a processor configured to execute program instructions; and

a memory containing program instructions for execution by the processor to

receive [a] the signal representing nucleic acid information,

determine a complexity for the signal, the complexity relating to at least energy levels associated with the signal, and

make [a correct] an allele call for the signal based on the determined complexity for the signal.

25. (Twice amended)   A computer-readable medium containing instructions for controlling a computer system to perform a method for [making correct allele calls] processing a signal, the method comprising:

receiving [a] the signal representing nucleic acid information;

determining a complexity for the signal, the complexity relating to at least energy levels associated with the signal; and

making [a correct] an allele call for the signal based on the determined complexity for the signal.